

IN THE CLAIMS

Please replace any previous listing of the claims with the following replacement listing of the claims:

Replacement Listing of the Claims

1. (CURRENTLY AMENDED) A method for enforcing a life cycle process in a source control system, comprising:

performing said life cycle process on at least one object of a control strategy for a process control system, wherein said life cycle process subjects said object to a plurality of ~~receiving a user-defined life cycle process having a plurality of states, each state having attributes;~~

receiving user-defined state transitions between said plurality of states;
providing a change state function for a user to change a current one of said states ~~associated with an object to a next one of said states associated with said object~~, said change state function verifying compliance with said user-defined state transitions; and

providing version control for said object in said source control system.

2. (ORIGINAL) The method according to claim 1, wherein said version control comprises:

providing a check-in function; and
providing a check-out function.

3. (ORIGINAL) The method according to claim 1, wherein said attributes include a fallback state.

4. (ORIGINAL) The method according to claim 1, further comprising:
receiving user-defined security for said user-defined state transitions.

5. (ORIGINAL) The method according to claim 4, wherein said user-defined security includes electronic signatures.
6. (ORIGINAL) The method according to claim 4, wherein said user-defined security includes which users have permission to make which state transitions.
7. (CANCELED)
8. (CURRENTLY AMENDED) The method according to claim 7~~1~~, wherein said attributes include whether said control strategy is loadable to a controller.
9. (ORIGINAL) The method according to claim 1, wherein receiving said user-defined life cycle process having said plurality of states, each state having attributes is performed through a user interface having an editable table, said table having state names as rows and attributes as columns and having cells indicating values for said attributes.
10. (ORIGINAL) The method according to claim 6, wherein receiving user-defined state transitions between said plurality of states is performed through a user interface having an editable table, said table having state names as rows and column and having cells indicating which users have permission to make which state transitions.
11. (CURRENTLY AMENDED) A computer readable medium having executable instructions stored thereon to perform a method in a life cycle process of determining permissions for actions with an object based on a user defined state of said object, wherein said life cycle process comprises a plurality of definitions of a plurality of user defined states ~~that each have a state definition~~ and a plurality of user defined state transitions between the plurality of states, said method comprising:

- receiving a request to perform an action with said object;
- determining whether said object has ever been checked-in to a source control system;
- determining whether said object is currently checked-in;
- retrieving from said plurality of definitions a definition of said user defined state of said object;
- determining from said definition whether said action is permissible in said state; and
- providing a permission status to perform or not perform said action with said object.

12. (PREVIOUSLY PRESENTED) A computer readable medium having executable instructions stored thereon to perform a method of validating user defined state transitions between user defined states, said method comprising:

- receiving a request to make a user defined state transition from one of said user defined states to a next one of said user defined states for an object from a user;
- determining whether said object is checked-in;
- determining whether said user has permission to make said state transition based on a user-defined state transition model that comprises restrictions and permissions for said user defined state transitions;
- permitting said state transition, if said user has permission; and
- providing a state transition status.

13. (PREVIOUSLY PRESENTED) A computer readable medium having executable instructions stored thereon to perform a method of validating a user defined state transition from a current state to a next state of a plurality of user defined states, said method comprising:

- determining whether said next state in a state transition request from a user is allowed from said current state in said user defined state transition request based on user-defined transition restrictions;

determining whether said user has permission to make said user defined state transition based on said user-defined transition restrictions; and
providing a state transition status.

14. (ORIGINAL) The computer readable medium according to claim 13, further comprising:

determining whether said state transition has a restricted signing requirement and, if so, verifying that said restricted signing requirement is met.

15. (PREVIOUSLY PRESENTED) A computer readable medium having executable instructions stored thereon to perform a method of validating a user defined state transition of a life cycle process in a source control system, said method comprising:

determining whether a current user defined state transition in a state transition request for an object from a user requires an electronic signature based on user-defined transition restrictions of said life cycle process;

determining whether a previous user defined state transition for said object required a previous electronic signature, if said current user defined state transition requires a current electronic signature;

allowing said current user defined state transition only if said previous electronic signature is different than said current electronic signature; and
providing a validation status.

16. (PREVIOUSLY PRESENTED) A computer readable medium having executable instructions stored thereon to perform a method of determining a new state for an object version upon check-in in a user defined qualifications process comprising a plurality of user defined states, said method comprising:

determining whether said object is being checked-in for a first time;

retrieving a first fallback state from said plurality of user defined states for a first pre-defined state, if said object is being checked-in for said first time, wherein said fallback state is a life cycle stage of said qualification process; and

providing said first fallback state, if said object is being checked-in for said first time.

17. (ORIGINAL) The computer readable medium according to claim 16, comprising:

- retrieving a current state for a current version of said object, if said object is not being checked-in for said first time;

- retrieving a current fallback state for said current state of said object, if said object is not being checked-in for said first time; and

- providing said current fallback state, if said object is not being checked-in for said first time.

18. (PREVIOUSLY PRESENTED) A computer readable medium having executable instructions stored thereon to perform a method of processing an addition of a new state to a life cycle qualification process comprising a plurality of user defined states, said method comprising:

- receiving a definition of said new state from a user, said definition including a name and a fallback state, wherein said fallback state is a life cycle stage of said qualification process;

- determining whether said name is unique among existing state definitions of said plurality of user defined states;

- validating said fallback state; and

- adding said definition to a source control system, only if said name is unique and said fallback state is valid.

19. (ORIGINAL) The computer readable medium according to claim 18, wherein said definition includes a restricted signing requirement and further comprising:

- validating said restricted signing requirement; and

wherein said adding said definition to said source control system is performed on an additional condition of whether said restricted signing requirement is valid.

20. (ORIGINAL) The computer readable medium according to claim 18, further comprising:

determining whether said user has a privilege to edit said definition; and
wherein said adding said definition to said source control system is performed on an additional condition of whether said user has said privilege.

21. (PREVIOUSLY PRESENTED) A computer readable medium having executable instructions stored thereon to perform a method of processing a modification of a state of a plurality of user defined states of a user defined qualification process, said method comprising:

receiving a modified definition of said user defined state from a user, said modified definition including a name and a fallback state, wherein said fallback state is a life cycle stage of said qualification process;

determining whether said name is unique among existing user defined state definitions;

validating said fallback state; and

updating said modified definition in a source control system, only if said name is unique and said fallback state is valid.

22. (ORIGINAL) The computer readable medium according to claim 21, wherein said definition includes a restricted signing requirement and further comprising:

validating said restricted signing requirement; and

wherein said updating said modified definition in said source control system is performed on an additional condition of whether said restricted signing requirement is valid.

23. (ORIGINAL) The computer readable medium according to claim 21, further comprising:

determining whether said user has a privilege to edit said definition; and
wherein said updating said modified definition in said source control system is performed on an additional condition of whether said user has said privilege.

24. (PREVIOUSLY PRESENTED) A computer readable medium having executable instructions stored thereon to perform a method of processing the deletion of a state of a plurality of user defined states in a life cycle process of a source control system, said method comprising:

receiving a request to delete a state definition for said state from a user;
determining whether said state definition is referenced by any other state definition in said source control system;

determining whether any objects in said source control system have a current state equal to said state;

deleting said state definition from said source control system, only if said state definition is not referenced by any other state definition in said source control system and no objects in said source control system have said current state equal to said state.

25. (ORIGINAL) The computer readable medium according to claim 24, further comprising:

determining whether said user has a privilege to delete said definition; and
wherein said deleting said state definition from said source control system is performed on an additional condition of whether said user has said privilege.

26. (CURRENTLY AMENDED) A source control system for a process control system, comprising:

a processor;

a life cycle process component executable on said processor to enforce compliance with user-defined life cycle states ~~of~~ for at least one objects of a control strategy of a plurality of devices of said process control system, wherein said life cycle process component subjects said object to said user-defined life cycle states;

a version control component executable on said processor to associate one or more version numbers with said objects;

a state configuration component executable on said processor to receive state information from a user for each state; and

a controller in communication with said processor via a network to be loaded with said objects to provide process control of said plurality of devices according to said control strategy.

27. (PREVIOUSLY PRESENTED) The system according to claim 26, further comprising:

another processor to back-up said processor.

28. (Canceled)

29. (PREVIOUSLY PRESENTED) The system according to claim 26, wherein said state information includes a state name and an indication of whether load to controller is allowed from that state.

30. (PREVIOUSLY PRESENTED) The system according to claim 26, wherein said state information includes a fallback state.

31. (PREVIOUSLY PRESENTED) The system according to claim 26, wherein said state information includes an indication of whether restricted signing is needed.

32. (PREVIOUSLY PRESENTED) The system according to claim 26, wherein said state configuration component provides editing functions for said state information.

33. (ORIGINAL) The system according to claim 26, further comprising:
a state transition component executable on said processor to receive state transition configuration requirements from a user.

34. (ORIGINAL) The system according to claim 33, wherein said state transition configuration requirements include which users have permission to make particular state transitions.

35. (ORIGINAL) The system according to claim 33, wherein said state transition configuration requirements include an indication of whether an electronic signature is needed to make particular state transitions.

36. (ORIGINAL) The system according to claim 26, wherein said version control component provides check-in and check-out functions.

37. (ORIGINAL) The system according to claim 26, further comprising:
a change qualification state component to process a qualification state transition request from a user.

38. (NEW) The method according to claim 8, wherein said user-defined states comprise a state of testing, and wherein a user requests one of said user-defined state transitions to said state of testing for testing said object loaded into said controller.